# **MSH Series**



- O Low Profile Ceramic SMD Package
- O Hermetically Sealed
- O Tristate Function/Standby Option
- O Wide Frequency Range

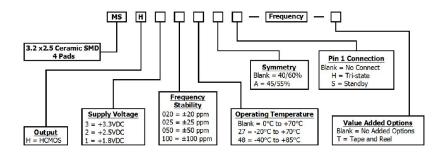


# **Electrical Specifications:**

Frequency Range		1.544MHZ to 70.000MHZ	1.544MHZ to 110.000MHZ	
Temperature Stability*		(See Part Number Guide for Options)		
Aging (+25°C ±3°C)		±5ppm First Year		
Operating Temperature Range		(See Part Number Guide for Options)		
Storage Temperature Range		-55°C to +125°C		
Supply Voltage (±10%)		+1.80VDC	+2.50VDC	+3.30VDC
Supply Current	1.544MHZ to 9.999MHZ	10mA max	12mA max	14mA max
	10.000MHZ to 35.999MHZ	12mA max	14mA max	16mA max
	36.000MHZ to 49.999MHZ	15mA max	20mA max	25mA max
	50.000MHZ to 110.000MHZ	25mA max	30mA max	35mA max
Standby Current (With Stand-by Option)		100μΑ		
Tristate		VOH = 70% of Vdd min or No Connection to Enable Output		
		VOL = 30% of Vdd max or grounded to Disable Output (High		
		Impendence)		
Logic "0"		10% Vdd max		
Logic "1"		90% Vdd min		
Output Type		HCMOS		
Symmetry (50% of waveform)		(See Part Number Guide for Options)		
Rise/Fall Time (10% to 90% of Supply Voltage)		5nSEC	6nSEC	7nSEC
Load		15pF		
Start-up Time		2mSec max		
* Inclusive of Ten	perature. Load and Voltage.			

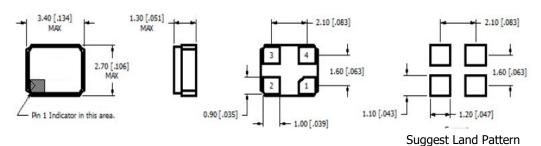


### **Part Number Guide**



PLEASE CONSULT WITH MMD SALES DEPARTMENT FOR ANY OTHER PARAMETERS OR OPTIONS

## **Mechanical Details**



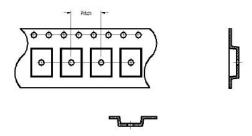
Pin Connections			
Pin 1	Tri-state, Standby		
	or No Connection		
Pin 2	Case Ground		
Pin 3	Output		
Pin 4	Supply Voltage		

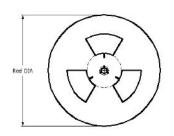
#### Notes:

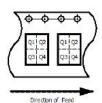
- Dimension in brackets are in inches.
- 2. An External Bypass Capacitor is recommended.
- 3. Pads Plating

Base or under conductor Ni thickness; 1.3 um to 8.8 um Final plating; Au (99.9) less than 0.5 um, 0.3 um typ

# **Tape & Reel Dimensions**







Pitch	4.00 [0.157]
Tape Width	8.00 [0.315]
Reel DIA	180 [7.0]
Count	1000
Pin 1 Orient	Q1

#### Notes: UNLESS OTHERWISE SPECIFIED

- 1. Applicable Standards / Specifications
  ANSI Y14.5M, Dimensions and Tolerances
  EIA-481-B, 8mm through 200mm Embossed
  Carrier Tapping and 8mm and 12mm
  Punched Carrier Tapping of Surface Mount
  Components for Automatic Handling.
- 2. Dimensions are in millimetres [inch].
- 3. Tolerances are  $\pm 0.1$  [0.004] mm unless otherwise specified.
- 4. Do not scale drawing.